FOREST CONSERVATION GOAL-SETTING IN MARYLAND

MEETING II:
Targeting Models and Sustainable Forestry Elements

MEETING NOTES

10am-2pm, January 29, 2007
Maryland Department of Natural Resources
Tawes C-1 Conference Room

Next Meeting Date:
Feb. 20, 10-2, CBF conference room, 6 Herndon Ave., Annapolis, 21403

Actions prior to meeting:
Present revised draft targeting strategy to Forestry Work Group.
Identify how respective land conservation programs target forests for presentation at the next meeting.

Meeting Summary:

Steve Koehn, Maryland State Forester, opened the meeting with introductions around the room and a reminder of the meeting purpose of setting a state forest conservation goal for the Chesapeake Bay Program Forest Conservation Directive 06-1.

Morning discussion involved the draft targeting strategies for conserving forests for water quality. Three models for identifying important forest lands were drafted, based on the recommendations received in the first meeting. The three models were for:

1) Protection long-term, such as for easement purchases on highest function acres,
2) Management, for an extensive working forest landscape, and
3) Restoration, to augment water quality protection through forests.

Considerations related to landscape context, watershed, and hydrogeomorphic regions. Models were developed by assigning 0-10 points for multiple equally weighted data layers, with values calculated in GIS for each pixel. Anne Hairston-Strang presented the data layers showing the geographic distribution for each layer of the protection model, the draft model result, and existing protected lands in Maryland. Eric Sprague conveyed an offer from the Chesapeake Bay Program to model the relative nutrient contributions of forest conservation and restoration strategies proposed.

Protection Model

The proposed data layers and 0-10 point ranking for the long-term protection model were distributed via email to the mailing list, and consisted of: Existing Forest, 100-ft stream/shoreline forest buffers, FEMA floodplains, Forested Wetlands (DNR layer),

Steep slopes over 25%, Wetlands and stream buffers in interior forest, forest blocks over 50 acres, Green Infrastructure Hub or Corridor, Priority Drinking Water Protection Areas (public water supply reservoir watersheds, surface water and groundwater/wellhead protection areas), Nitrogen reduction efficiency by Hydrogeomorphic Regions, Phosphorus reduction efficiency by Hydrogeomorphic Regions, N incremental (edge of stream) loading from USGS SPARROW model, P incremental (edge of stream) loading from USGS SPARROW model, Sensitive Species Protection and Restoration Areas for rare species (some aquatic), High Quality Forest Interior Dwelling Species habitat (large forest blocks), The Nature Conservancy Priority Forest Matrices (very large forest blocks important to rare species), Maryland Biological Stream Survey Stronghold watersheds of high-quality streams/headwaters, and important stream habitats (cold-water, limestone, and blackwater streams).

The draft model result was displayed, followed by a map of lands already in some form of protection and focus areas of two of the potential land conservation programs, Program Open Space and Forest Legacy (draft).

Discussion and written comments from those unable to make the meeting included the following comments:

- Add a model layer for atmospheric deposition of Nitrogen in Maryland forests;
- Add a layer for brook trout populations so that unique Piedmont populations would not be missed (do not correspond exactly with cold-water streams layer);
- Add a model layer for watersheds with TMDLs required for N, P, sediment, bacteria, or biological impairments to prioritize areas where forest loss would compound difficulty in meeting Clean Water Act requirements;
- Display protected lands on the forest protection map to be able to better identify unmet need for protection;
- Display Rural Legacy areas as well as POS and Forest Legacy, to better capture potential of existing programs to fund easements in priority areas;
- Avoid designated floodways, where tree planting would not be permitted

Additional considerations in developing or using the protection model included:

- The need to fund and provide forest cover data updates on a more frequent basis;
- The need to fund the digitizing/georeferencing of local government easements not currently in GIS layers- some areas are shown as unprotected, but actually have substantial areas of local easements- may be primarily paper records;
- How to bring in characteristics/demographics of past successes/adopters of good forest conservation practices;
- Not masking out CREP buffers and other important nutrient reduction BMPs if ag lands are not displayed on the map;
- How to target education for landowners and public;
- How to account for Economic efficiency – consider cost/benefit for approaches.

It was noted that Maryland has exceeded the 20% land conservation goal called for in the Chesapeake 2000 Agreement, and an estimated 27% (or more) of forest land in Maryland

is currently protected from development through a variety of land ownerships and land conservation programs.

Management Model

The forest management model is intended to target actions supporting a working forest landscape. The approach proposed was to adjust a national model, Stewardship Spatial Analysis Project (SAP) that has been developing to prioritize forest stewardship efforts, a fundamentally similar goal. Since this would be only for Maryland, parameters can be adjusted to better fit state conditions and better data sets could be used where available. Data layers from SAP are: Private ownership, Forest blocks over 50 acres, 300-foot forest buffers, wetlands, Priority Watersheds (AgNIPS and other), within 1 km of Drinking Water Intakes, Steep slopes 15-35%, Wildfire Vulnerability, Proximity to public land (1000 m), Threatened and Endangered Species, Vulnerability to development (1-8 households/km2/yr), Forest health (past defoliation by gypsy moth),

Staff recommended at least adjusting forest block size and replacing the 1 km-drinking water intake layer with the recently acquired layers from MD Dept. of Environment Source Water Protection Program that covers groundwater and surface water priority protection areas.

Discussion generated the following points:

- Provide analysis for forest blocks in three categories, 50+, 20+, and 10+ acres, to be able to show priorities for different types of landowner and different programs/education and address the full extent of the working forest;
- The MDE Source Water Protection layers should be used in place of the national layer of areas within 1 km of public water intakes;
- Consider economically important forests through layers like
    - Strategic Forest Land Assessment (SFLA) economic value and/or
    - Rural Enterprise Zones.
- Consider education and outreach and targeting needs, e.g., for small landowners.
- Consider how to include smaller forest acres e.g. FCA easements and/or CREP easements.
- Separate out vulnerability to use when designating strategies or targeting for specific programs.
    - SFLA
    - SLEUTH/GAME 2030 growth projection
    - Rate of Parcel Change from MDP
    - Forest Conservation Act data on forest loss (may not lose forest on large lot/Parcel/zone from property).
    - Link to storm water management.

Restoration Model

The restoration model includes nonforest lands, adjacency to existing forest, unforested buffers, non-wetland hydric soils, headwater streams, rare species habitat, areas with high N loading (incremental loading from SPARROW), % reduction efficiency for N and P by hydrogeomorphic regions, and impervious surfaces. High-productivity agricultural soils are intended to be masked out outside of buffer areas to avoid undue impact to prime ag soils.

Suggestions for altering the restoration model to better target new forests to augment the role of forests conserved for water quality were:

- Mask out Smart Growth areas to avoid targeting intended growth areas;
- Avoid designated floodways (MDE maps);
- Consider County Zoning as a significant protection mechanism, since some conservation zones have been in place for more than two decades under heavy growth pressure. Potential layers could be:
    - Generalized Zoning Layer developed by MDP(Vulnerability)
    - Buildout analysis developed by MDP (contact: Jim Riley)
    - Different zoning categories by county not captured by MDP

Other issues to be addressed in restoration actions are:

- Use of forestland in offsetting stormwater requirements (e.g., Eastern Shore);
- Trading for storm water management, source water protection, water quality infrastructure, cap and trade;
- Waste Management systems with biosolids/poplar;
- Potential for old surface mines (gravel, coal, sand, etc.) to be restoration sites;
- Role of biomass plantings;
- Reforestation needs to address existing TMDLs, identified problems with nutrients, sediment, biological impairments.

Urban Tree Canopy Targeting

Models to target urban tree canopy were not developed at the statewide scale. Maryland has several areas where detailed urban canopy analysis has been done at 1-m scale more effective for identifying presence of and potential for urban canopy.

Identified needs for considering effects of urban forest canopy were:

- Better records on forests maintained for storm water management.
- Effects of exotic and invasive species and their removal (could use distance from edge, road, utility corridor as a proxy for likely presence of invasive species).

Sustainable Forestry and Forest Conservation

Following a lunch break, discussion moved to the use of forest sustainability as a core concept in conserving forest. Anne Hairston-Strang reviewed the seven criteria of the international sustainable forest effort (Montreal Protocol) to show the intended scope of consideration: conservation of biological diversity, productive capacity of forest

ecosystems, health and vitality of forest ecosystems, soil and water conservation, contribution to global carbon cycles, long-term multiple socioeconomic benefits, and legal, institutional, and economic framework. The intention of the new governor to fully fund major conservation programs, Program Open Space and MALPF, was noted.

Don Outen of the Baltimore County Department of Environmental Protection and Resource Management presented the County's multi-year effort to apply the international criteria and indicators for sustainable forestry at a local level (Powerpoint available on request). A network of partners has developed a strategy to sustain forests and their functions in the county, and continues to meet to implement supporting actions. Elements strongly related to the forest conservation goals include:

- Zoning designed to discourage fragmentation and enhance buffers (Zoning RC-6, Zoning RC-4);
- Use of easements to avoid development in key areas for environmental protection;
- 6 major conservation programs for different tools and approaches;
- Commitment to develop urban canopy goal within the Urban-Rural Demarcation Line;
- Development Regulations that restrict forest clearing
- (Example: Forest Conservation Act in Baltimore County saves 68% of forest on developed areas)
- Concern about cumulative impact of net forest loss in Baltimore County of ~230ac/yr;
- New programs being used to expand forest area and number of urban canopy trees are:
    - Growing Home Campaign that merges grant funding and County Stormwater Capital funds to supply $10 coupon off $25+ tree for homeowners to plant in their yards;
    - Rural Residential Stewardship that targets areas with 3+ acre lots to identify suitable areas like stream buffers for afforestation on adjacent private lots.

Include information on forest conservation relevant to regional, state, and local programs related to improving water quality/forest commitments:

- Total Maximum Daily Load modeling and permitting;
- National Pollutant Discharge Elimination System permitting (NPDES, MS4 for storwmater);
- Chesapeake Bay Agreement commitments;
- Planning requirements like Local Land Protection, Park, and Recreation Plans;
- Source water Protection for drinking water;
- Clean Air Act, including ozone reduction related to urban heat buildup;

Education efforts should include a variety of target audiences, including the smaller landowners, "back yard woods".

Land Protection

Discussion proceeded on issues to be considered for land protection from development and setting forest conservation goals for the state. Estimates of conserved land in the state show that more than 20% of Maryland has some mechanism to protect it from development. About 27% of existing forest is included in that area. Some of that area is already many of the areas ranked highly in the draft model.

Address ability to harvest/manage on conserved lands to support regeneration; Consider forest conservation in context of all tributary strategy BMPs, including agricultural and stormwater BMPs;

Working with existing programs:

- Use existing programs like Rural Legacy and augment forest prioritization within mandate rather than trying to create an entire new program, especially considering the complexity and infrastructure needed for easement programs;
- Identify forest protection policies of existing land conservation programs;
- Note the DGS regulations only allow development value of land to be included in valuation, not other resource values/pricing like ecosystem values;
- Identify limitations of existing conservation programs for protecting high-value forest land based on funding priorities/authorizations (e.g., can programs protect lands only within designated focus areas- Program Open Space can purchase outside areas;
- Note that a centralized easement process is under development for at least within DNR;
- Provide better support for the ongoing and expanding need for monitoring easements;
- Need to better account for additional protection being provided by County-level Agriculture Preservation Programs and other local programs (conservation zoning, TDRs, locally held conservation easements) not represented in current GIS layers;
- Require Forest Stewardship Plan & Sustainable practices where forests are under easement or are purchased through programs like Program Open Space, even if forest was incidental to recreation/park development;
- Require implementation as well as preparation of forest stewardship plans, although monitoring implementation is challenging;
- Advertise forest land easement purchase potential- increase awareness of options for landowners, including benefits associated with donated easements;

Potential for new actions-land protection:

- Identify gaps that are not eligible for major easement programs like Rural Legacy/MALPF;
- Enhance coordination of funding and candidate parcels among programs (occurs to some extent, could expand);
- Tax Credit /Forgiveness for RFBs or Management Plans;

    - Property tax tied to forest use with a plan –
    - Income tax writeoff, fed/state/local
- Enhance tax policies for donating easements (possible limitations for family corporations with existing inheritance and tax credits as per recent MET/TNC workshop)
- Local government idea exchange – Baltimore County example write-up.
- Encourage County or Municipal targets for forest conservation;
- HB1141 – A guidance document for local governments has been drafted for the water resources element. Other elements like the expansion of the sensitive areas element to include forests may have explicit guidance (need to confirm). Elements are to be implemented by 2009.

Working Forest

Land conservation programs that purchase easements or land can be used to target areas with particularly high environmental value, but the Chesapeake Bay goals will rely on keeping extensive areas of current forest land in forest. The forest conservation goal is intended to support working rural landscapes. Issues and actions related to working forest were discussed:

Financial tools:

- Land exchange bank – public unforested traded for private forested (same density to be realized)
- Revolving loan fund to avoid forest sales for health, college, estate tax, etc. Fund with proceeds from sustainable forest management/stumpage or other income stream.
- Increase FCA standards – no net loss? Or cash for fee-in-lieu.
- National tax break
- Developing Multiple Markets
    - Fiber and traditional wood products;
    - Landowner registry, cap-and-trade basis for selling credits;
    - Nonpoint Pollution Source credit trading – TMDL/NPDES/MS4 requirements;
        - Cap and trade system
        - Consider scale effects
    - Air Quality State Implementation Plan, e.g., meeting requirements for ozone – urban canopy financed by utilities;
    - Biomass
        - Low quality hardwood/small pine needs federal support
        - Cellulosic Ethanol – creating jobs, making money, new trees
        - New markets: e.g., Charcoal market in Haiti;
- County regulations may prevent harvest in easements;
- Some programs specifically limit resource utilization, such as federal land agencies, the NOAA Coastal and Estuarine Land Conservation Program

(no"working lands") and some limitations in the NRCS Farm and Rangeland Protection Program;
- Ecosystem Services Values;
- Forest Development/Conversion;
- Lost ecosystem services fee
    - stormwater
    - airquality
    - habitat
    - recreation travel cost
    - aesthetics;
- Mitigation Banking.

Education and Outreach tools/ Making the Forests Relevant to the Public:

Education and outreach are needed to build the fundamental understanding of the benefits and forests and role for management that forms the basis for keeping forests on the landscape across a variety of ownerships. They also are needed to spread information on any financial tools that may be available and how to use them. Issues discussed included:

- Loss of outreach staff – severe cut in forester positions;
- Roles for local land trusts;
- Look at forest as well as farm coordination at the county level (Percent of income from forest is hard to define on an annual basis);
- Smaller landowners equal support base
    - Program support politically
    - Relevant to their needs
- Coordinate forestry community with county commissioners
    - Harvests
    - Deer management
- Sustainable forestry
    - Identify value – not "no touch"
    - Consensus – Task force which is county based
        - Education of local government officials/new landowners
    - Key Research Areas

<u>Urban Forest Canopy and Stormwater</u>

Canopy Analysis in a good basis for information at urban-appropriate scale.
- The UFORE (Urban Forest Effects) model can help define benefits for ecosystem services.
- Keep Urban as a separate category e.g. Urban/Rural Demarcation Line (URDL) in Baltimore County
- Use an interagency approach to coordinate related state programs:
    - Urban ~ stormwater requirements
    - MS4 plans

- Most common forest retention in low density residential areas, but can occur elsewhere
- Stormwater retrofit ~ 1%/year intended not achieved.
- Include measures where Public Health is improved and capitalize on related business interests;
    - Air/Asthma
    - Insurance company partnerships – Dell Computer partnership with Conservation Fund to fund tree plantings in urban areas.
    - Corporate partnerships
        - Air Quality/Water quality
        - Publicity

Next Meetings:

Feb: Land Conservation

March: Environmental Market Opportunities/ Regulations

State goal due to the Chesapeake Bay Program: April 30

Attendance:

First	Last	Email	Agency/Organization
Dan	Baldwin	dbaldwin@mdp.state.md.us	MD Dept. of Planning
Vince	Berg	bergvh@erols.com	Consultant & SWQAC member
Steve	Bunker	sbunker@tnc.org	The Nature Conservancy
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